



Evaluation Results & Selections

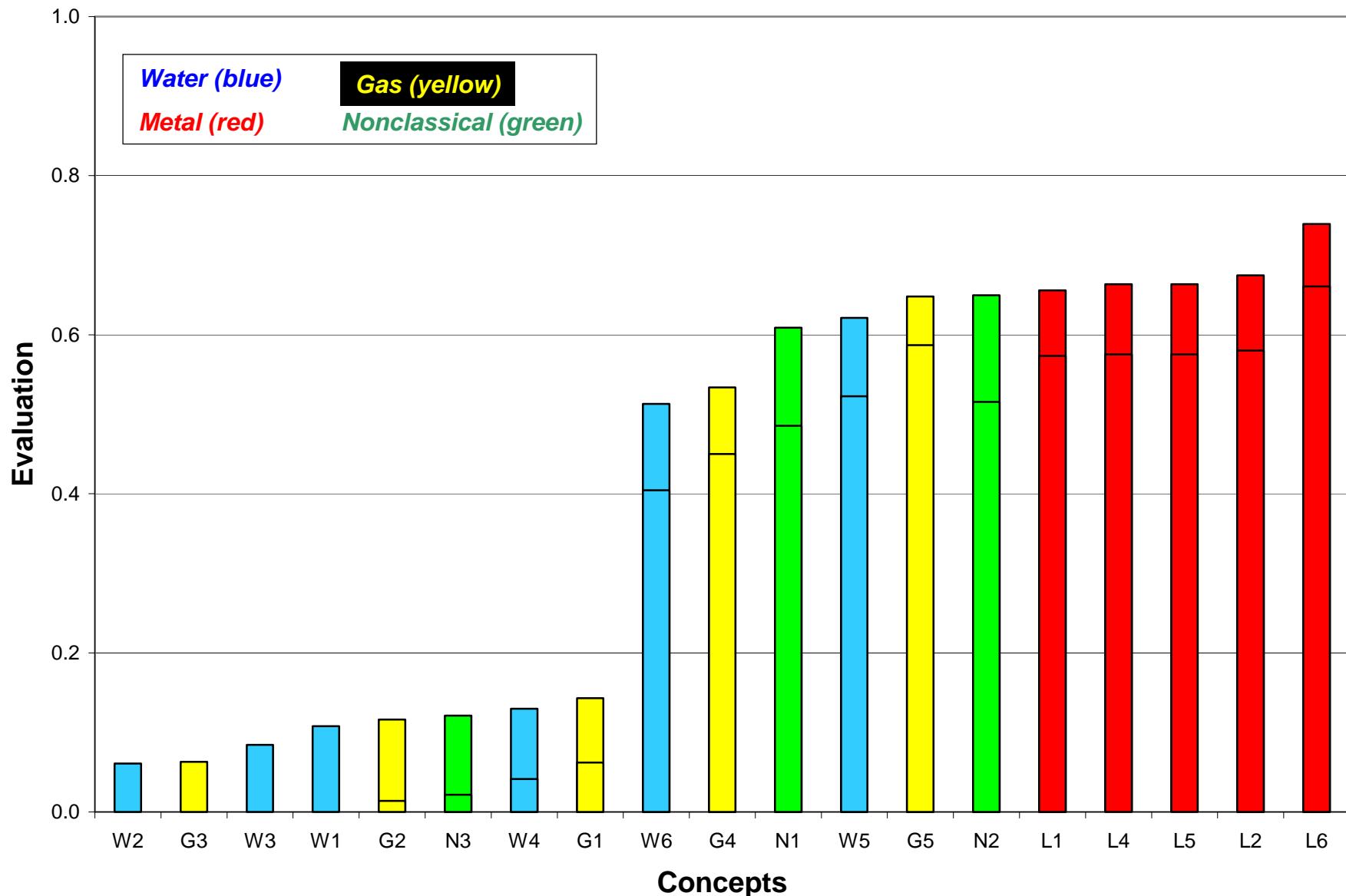
GRNS Meeting: Washington, DC
April 2–3, 2002

Outline

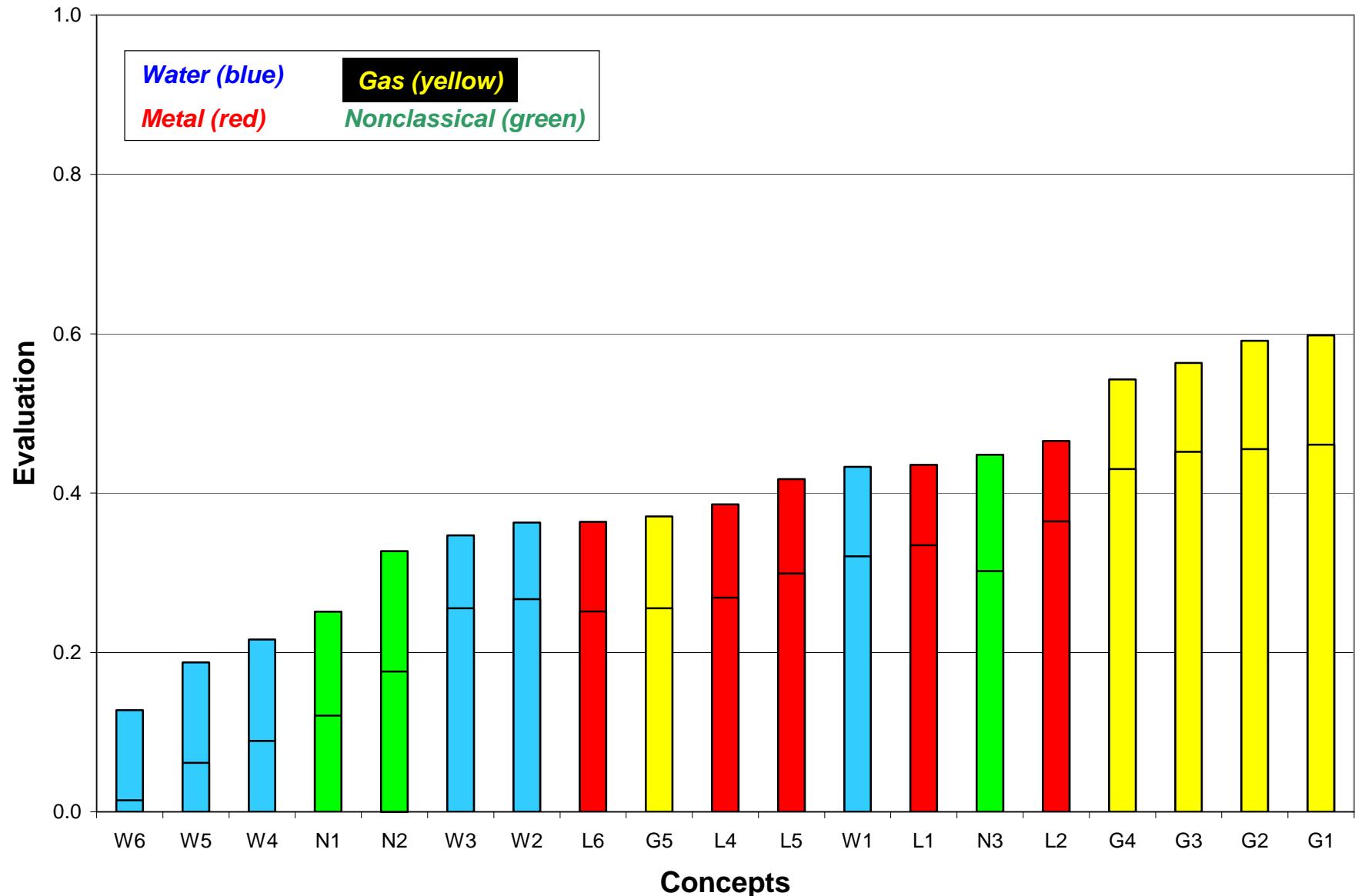
- 1. *Review evaluation data for concepts***
- 2. *Explore a few requested sensitivities***
- 3. *Walkdown through the candidates***
- 4. *Identify any remaining actions***

Evaluation Data Summaries

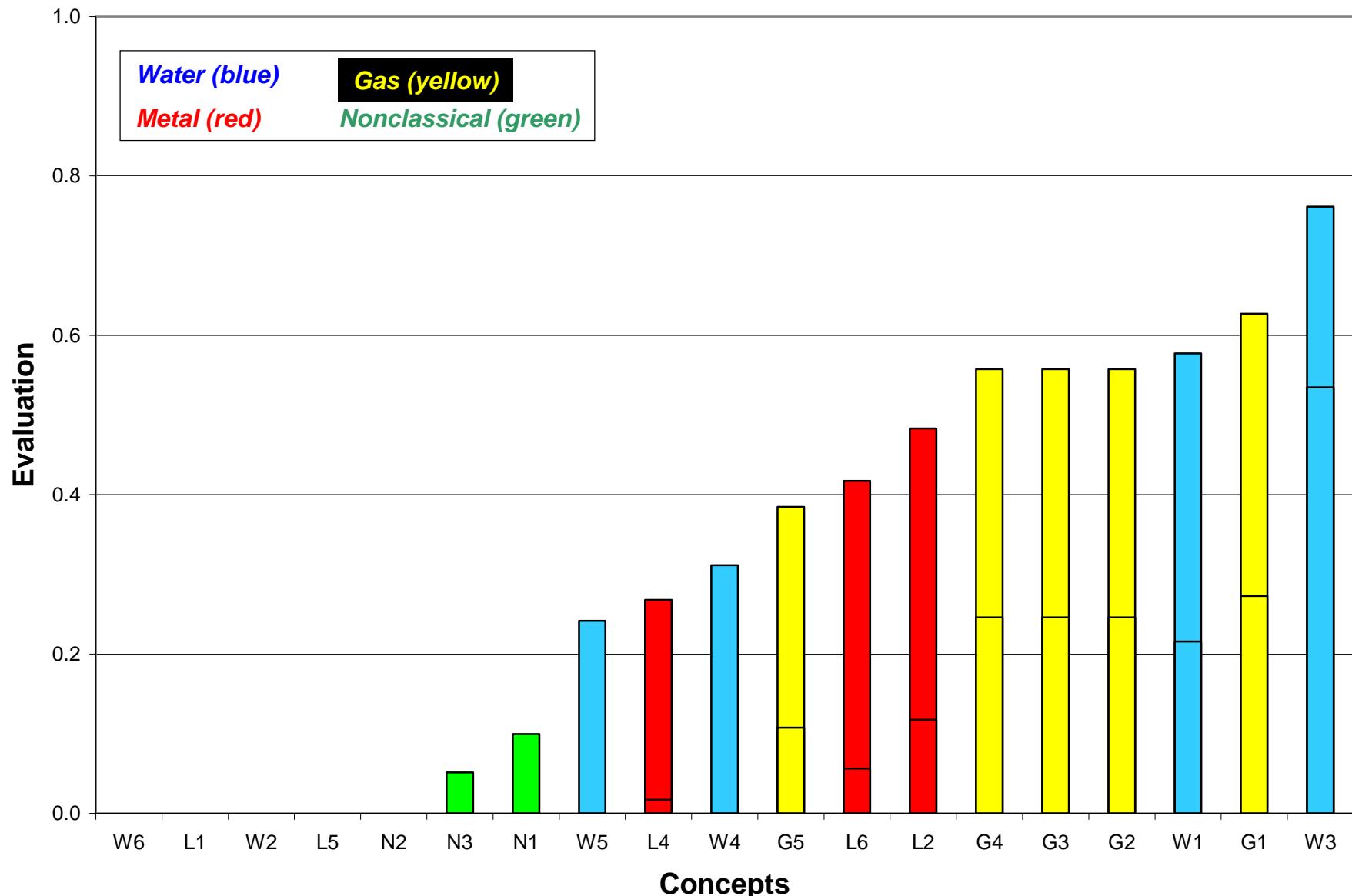
Sustainability Goal Area Evaluations



Safety & Reliability Goal Area Evaluations



Economics Goal Area Evaluations



Goal Area Evaluations and Ranking

System	ID	SU	SR	EC*
Pb/Bi Battery	L6	0.74	0.36	0.42
Na Metal Pyro	L2	0.67	0.47	0.48
Pb large	L5	0.66	0.42	-0.15
Pb/Bi small	L4	0.66	0.39	0.27
Na MOX Aq	L1	0.66	0.44	-0.31
VCR	N2	0.65	0.33	-0.10
GFR	G5	0.65	0.37	0.38
SCWR-F	W5	0.62	0.19	0.24
MSR	N1	0.61	0.25	0.10
HTGR Closed	G4	0.53	0.54	0.56
HC-BWR	W6	0.51	0.13	-0.48
PBR	G1	0.14	0.60	0.63
SCWR-T	W4	0.13	0.22	0.31
AHTR	N3	0.12	0.45	0.05
PMR	G2	0.12	0.59	0.56
IPSR	W1	0.11	0.43	0.58
CANDU NG	W3	0.08	0.35	0.76
VHTR	G3	0.06	0.56	0.56
SBWR	W2	0.06	0.36	-0.17

System	ID	SU	SR	EC*
PBR	G1	0.14	0.60	0.63
PMR	G2	0.12	0.59	0.56
VHTR	G3	0.06	0.56	0.56
HTGR Closed	G4	0.53	0.54	0.56
Na Metal Pyro	L2	0.67	0.47	0.48
AHTR	N3	0.12	0.45	0.05
Na MOX Aq	L1	0.66	0.44	-0.31
IPSR	W1	0.11	0.43	0.58
Pb large	L5	0.66	0.42	-0.15
Pb/Bi small	L4	0.66	0.39	0.27
GFR	G5	0.65	0.37	0.38
Pb/Bi Battery	L6	0.74	0.36	0.42
SBWR	W2	0.06	0.36	-0.17
CANDU NG	W3	0.08	0.35	0.76
VCR	N2	0.65	0.33	-0.10
MSR	N1	0.61	0.25	0.10
SCWR-T	W4	0.13	0.22	0.31
SCWR-F	W5	0.62	0.19	0.24
HC-BWR	W6	0.51	0.13	-0.48

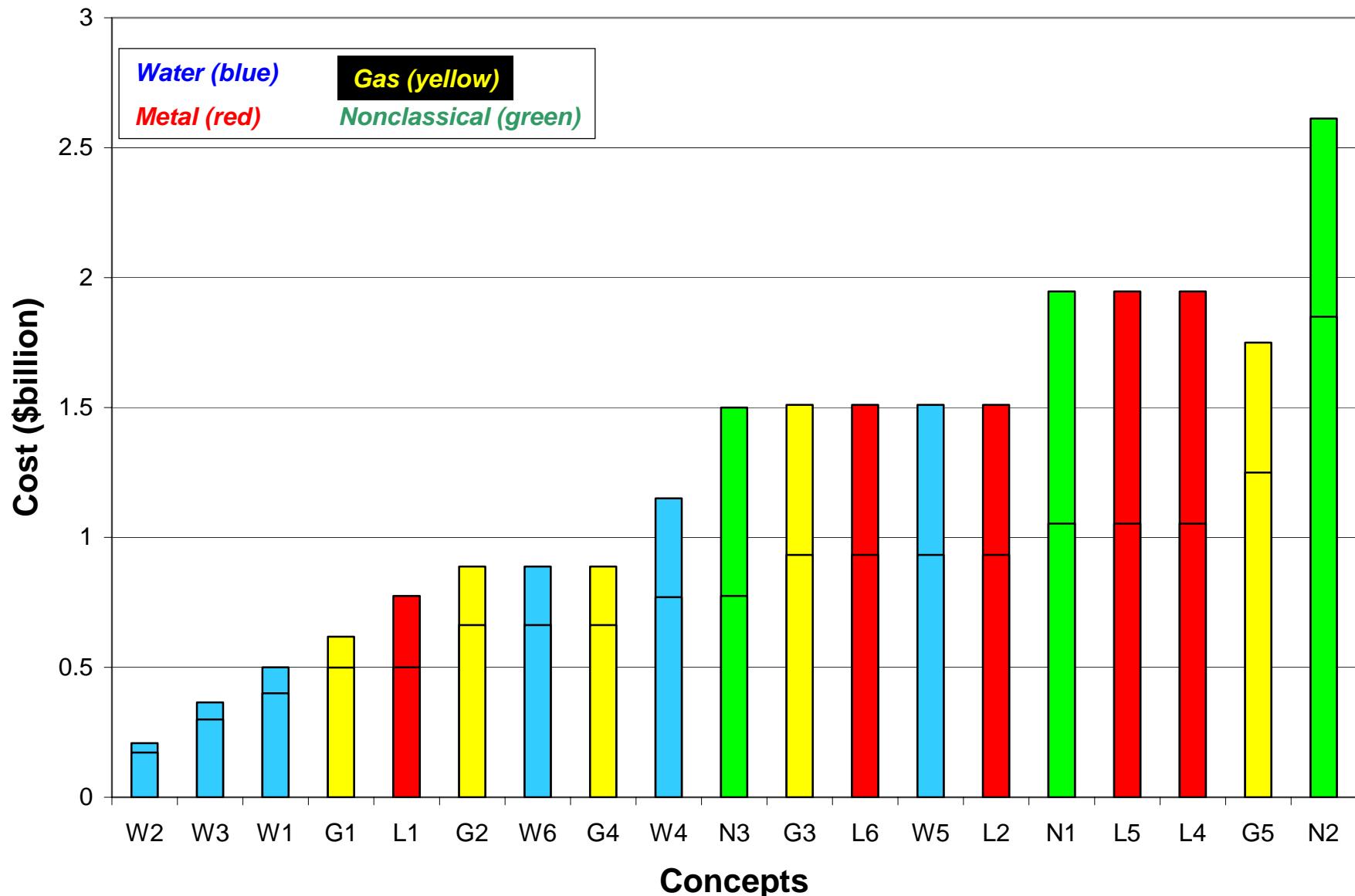
System	ID	SU	SR	EC*
CANDU NG	W3	0.08	0.35	0.76
PBR	G1	0.14	0.60	0.63
IPSR	W1	0.11	0.43	0.58
PMR	G2	0.12	0.59	0.56
VHTR	G3	0.06	0.56	0.56
HTGR Closed	G4	0.53	0.54	0.56
Na Metal Pyro	L2	0.67	0.47	0.48
Pb/Bi Battery	L6	0.74	0.36	0.42
GFR	G5	0.65	0.37	0.38
SCWR-T	W4	0.13	0.22	0.31
Pb/Bi small	L4	0.66	0.39	0.27
SCWR-F	W5	0.62	0.19	0.24
MSR	N1	0.61	0.25	0.10
AHTR	N3	0.12	0.45	0.05
VCR	N2	0.65	0.33	-0.10
Pb large	L5	0.66	0.42	-0.15
SBWR	W2	0.06	0.36	-0.17
Na MOX Aq	L1	0.66	0.44	-0.31
HC-BWR	W6	0.51	0.13	-0.48

Goal Area Evaluations and Ranking



System	ID	SU	SR	EC*	System	ID	SU	SR	EC*	System	ID	SU	SR	EC*
Pb/Bi Battery	L6	0.74	0.36	0.42	PBR	G1	0.14	0.60	0.63	CANDU NG	W3	0.08	0.35	0.76
Na Metal Pyro	L2	0.67	0.47	0.48	PMR	G2	0.12	0.59	0.56	PBR	G1	0.14	0.60	0.63
Pb large	L5	0.66	0.42	-0.15	VHTR	G3	0.06	0.56	0.56	IPSR	W1	0.11	0.43	0.58
Pb/Bi small	L4	0.66	0.39	0.27	HTGR Closed	G4	0.53	0.54	0.56	PMR	G2	0.12	0.59	0.56
Na MOX Aq	L1	0.66	0.44	-0.31	Na Metal Pyro	L2	0.67	0.47	0.48	VHTR	G3	0.06	0.56	0.56
VCR	N2	0.65	0.33	-0.10	AHTR	N3	0.12	0.45	0.05	HTGR Closed	G4	0.53	0.54	0.56
GFR	G5	0.65	0.37	0.38	Na MOX Aq	L1	0.66	0.44	-0.31	Na Metal Pyro	L2	0.67	0.47	0.48
SCWR-F	W5	0.62	0.19	0.24	IPSR	W1	0.11	0.43	0.58	Pb/Bi Battery	L6	0.74	0.36	0.42
MSR	N1	0.61	0.25	0.10	Pb large	L5	0.66	0.42	-0.15	GFR	G5	0.65	0.37	0.38
HTGR Closed	G4	0.53	0.54	0.56	Pb/Bi small	L4	0.66	0.39	0.27	SCWR-T	W4	0.13	0.22	0.31
HC-BWR	W6	0.51	0.13	-0.48	GFR	G5	0.65	0.37	0.38	Pb/Bi small	L4	0.66	0.39	0.27
PBR	G1	0.14	0.60	0.63	Pb/Bi Battery	L6	0.74	0.36	0.42	SCWR-F	W5	0.62	0.19	0.24
SCWR-T	W4	0.13	0.22	0.31	SBWR	W2	0.06	0.36	-0.17	MSR	N1	0.61	0.25	0.10
AHTR	N3	0.12	0.45	0.05	CANDU NG	W3	0.08	0.35	0.76	AHTR	N3	0.12	0.45	0.05
PMR	G2	0.12	0.59	0.56	VCR	N2	0.65	0.33	-0.10	VCR	N2	0.65	0.33	-0.10
IPSR	W1	0.11	0.43	0.58	MSR	N1	0.61	0.25	0.10	Pb large	L5	0.66	0.42	-0.15
CANDU NG	W3	0.08	0.35	0.76	SCWR-T	W4	0.13	0.22	0.31	SBWR	W2	0.06	0.36	-0.17
VHTR	G3	0.06	0.56	0.56	SCWR-F	W5	0.62	0.19	0.24	Na MOX Aq	L1	0.66	0.44	-0.31
SBWR	W2	0.06	0.36	-0.17	HC-BWR	W6	0.51	0.13	-0.48	HC-BWR	W6	0.51	0.13	-0.48

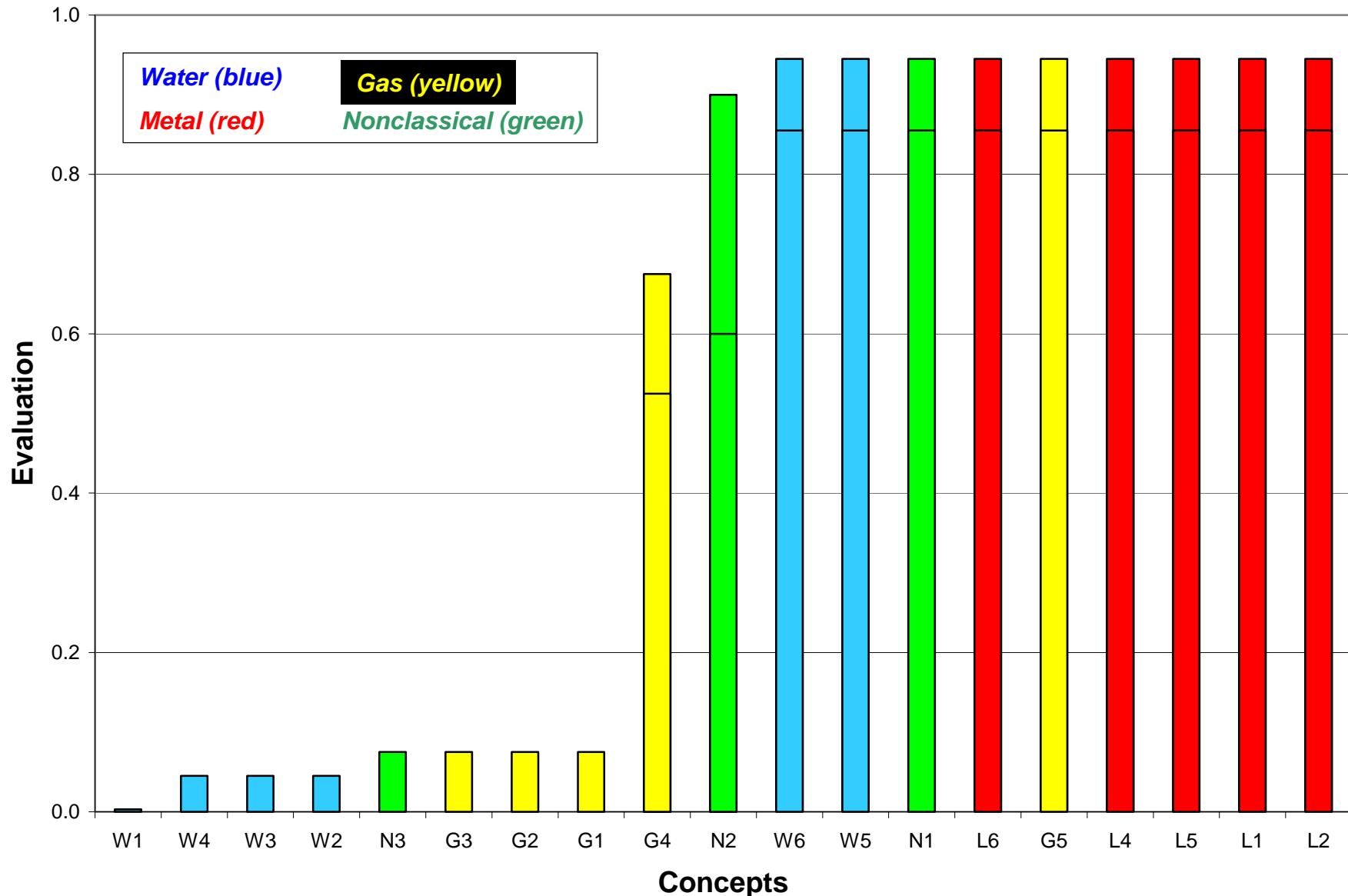
Development Costs



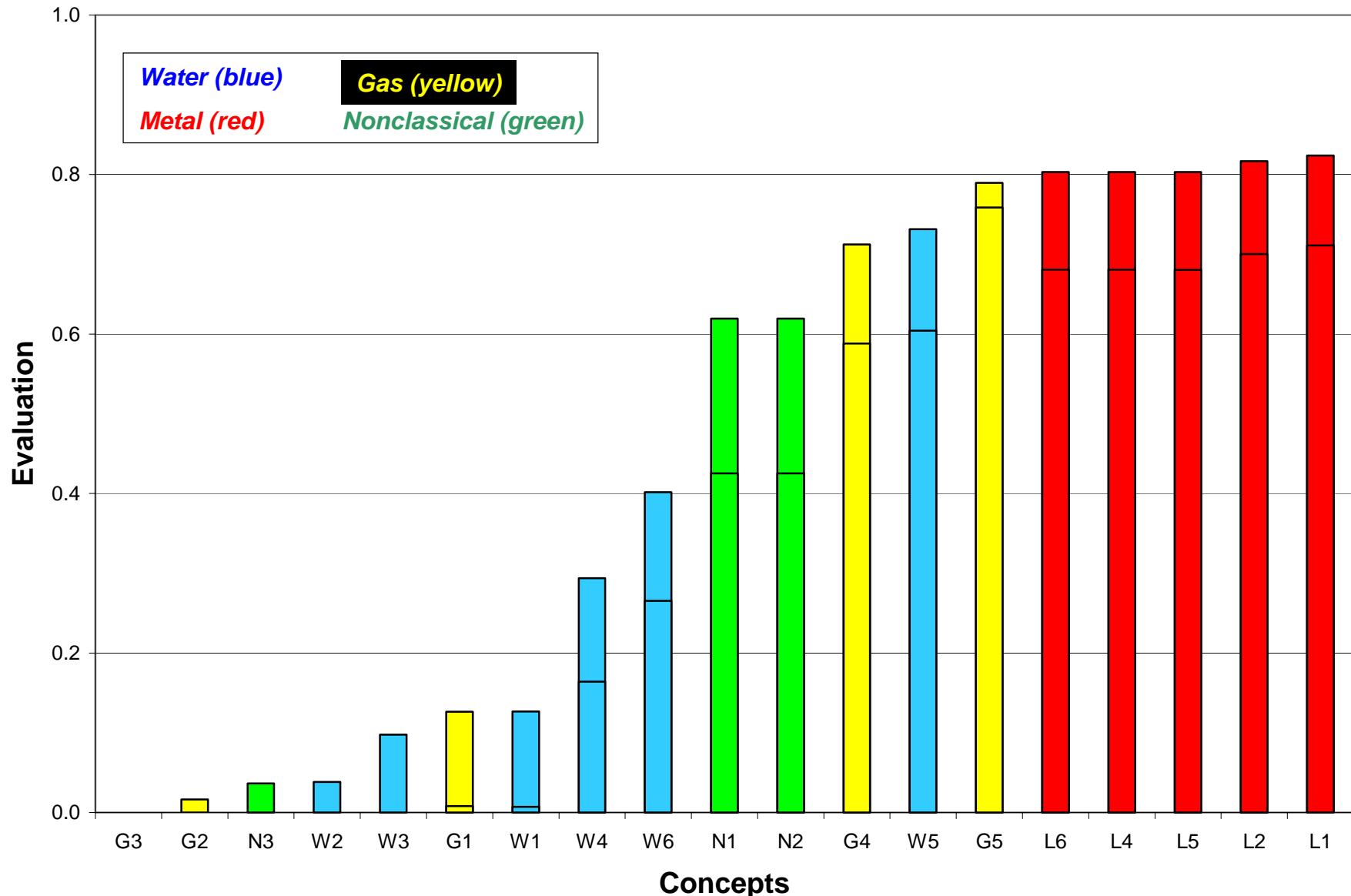
Development Costs (in \$B)

Concept	ID	75%	Percentile	
			50%	25%
SBWR	W2	0.172	0.190	0.208
CANDU NG	W3	0.299	0.329	0.365
IPSR	W1	0.400	0.450	0.500
PBR	G1	0.499	0.529	0.618
Na MOX Aq	L1	0.500	0.550	0.775
PMR	G2	0.663	0.775	0.888
HC-BWR	W6	0.663	0.775	0.888
HTGR Closed	G4	0.663	0.775	0.888
SCWR-T	W4	0.770	0.904	1.150
AHTR	N3	0.775	1.000	1.500
VHTR	G3	0.933	1.214	1.510
Pb/Bi Battery	L6	0.933	1.214	1.510
SCWR-F	W5	0.933	1.214	1.510
Na Metal Pyro	L2	0.933	1.214	1.510
MSR	N1	1.054	1.500	1.946
Pb Large	L5	1.054	1.500	1.946
Pb/Bi Small	L4	1.054	1.500	1.946
GFR	G5	1.250	1.500	1.750
VCR	N2	1.850	2.257	2.613

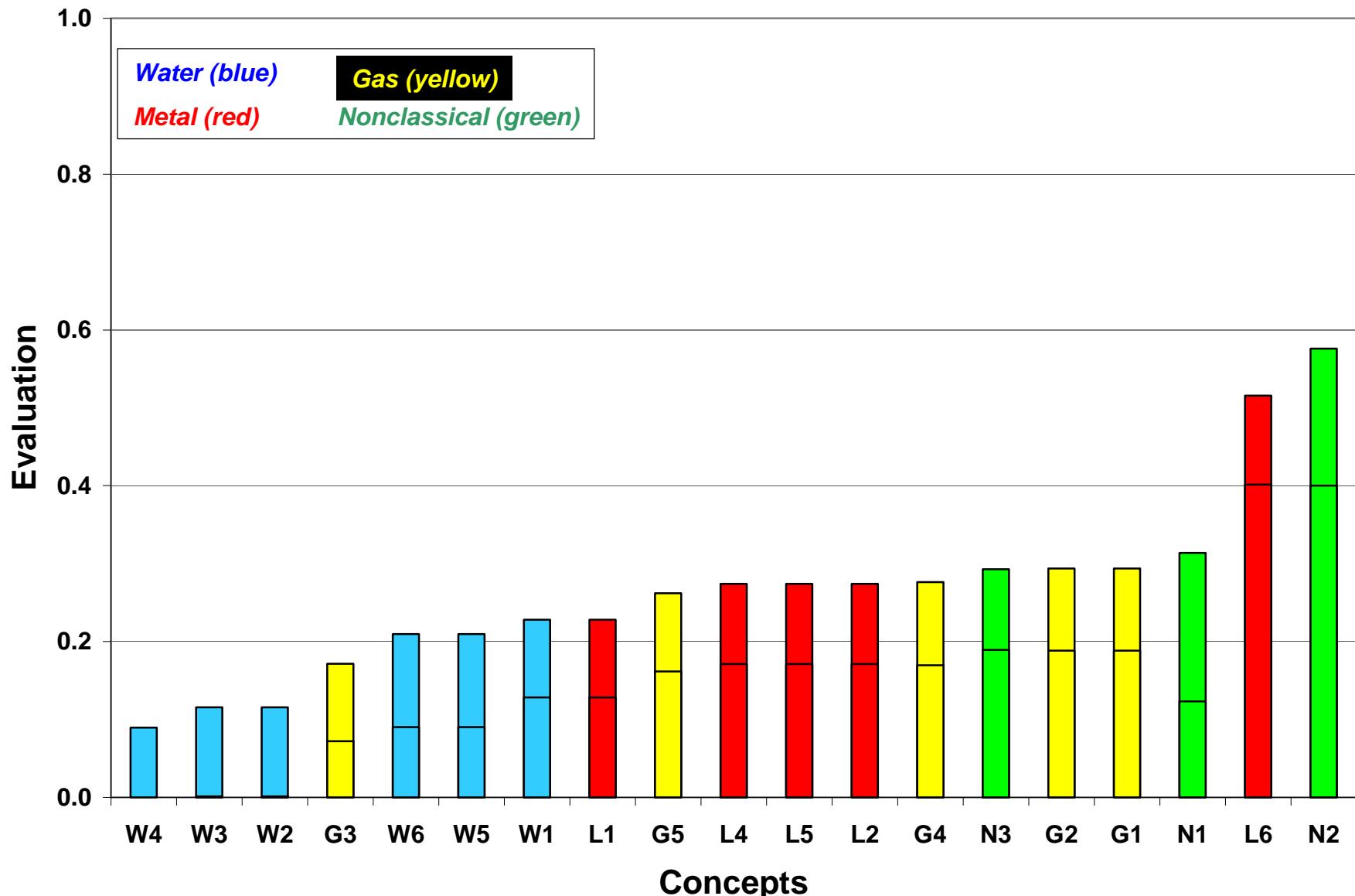
Sustainability Goal 1 Evaluations



Sustainability Goal 2 Evaluations



Sustainability Goal 3 Evaluations

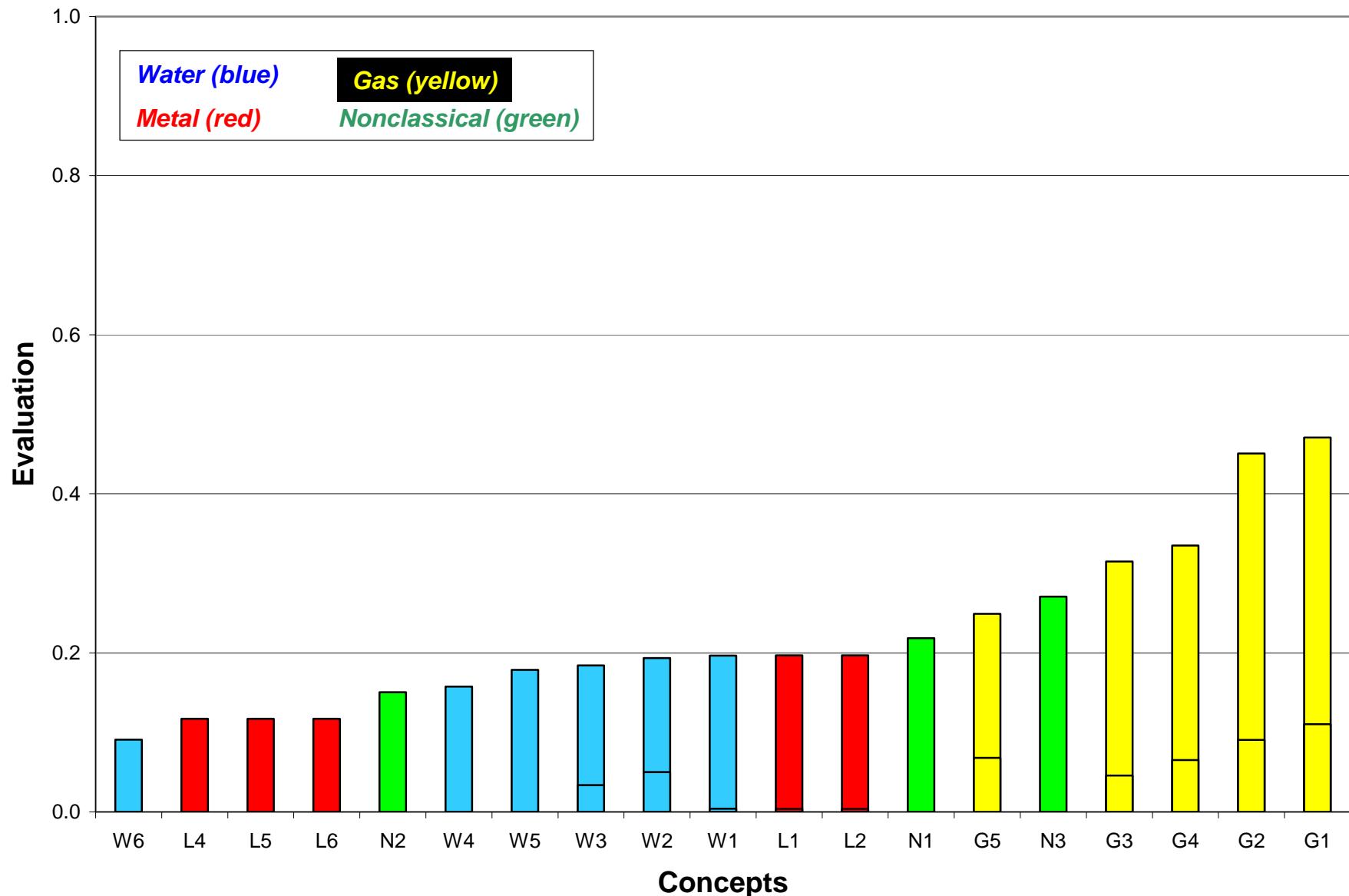


Sustainability Goal Evaluations and Ranking

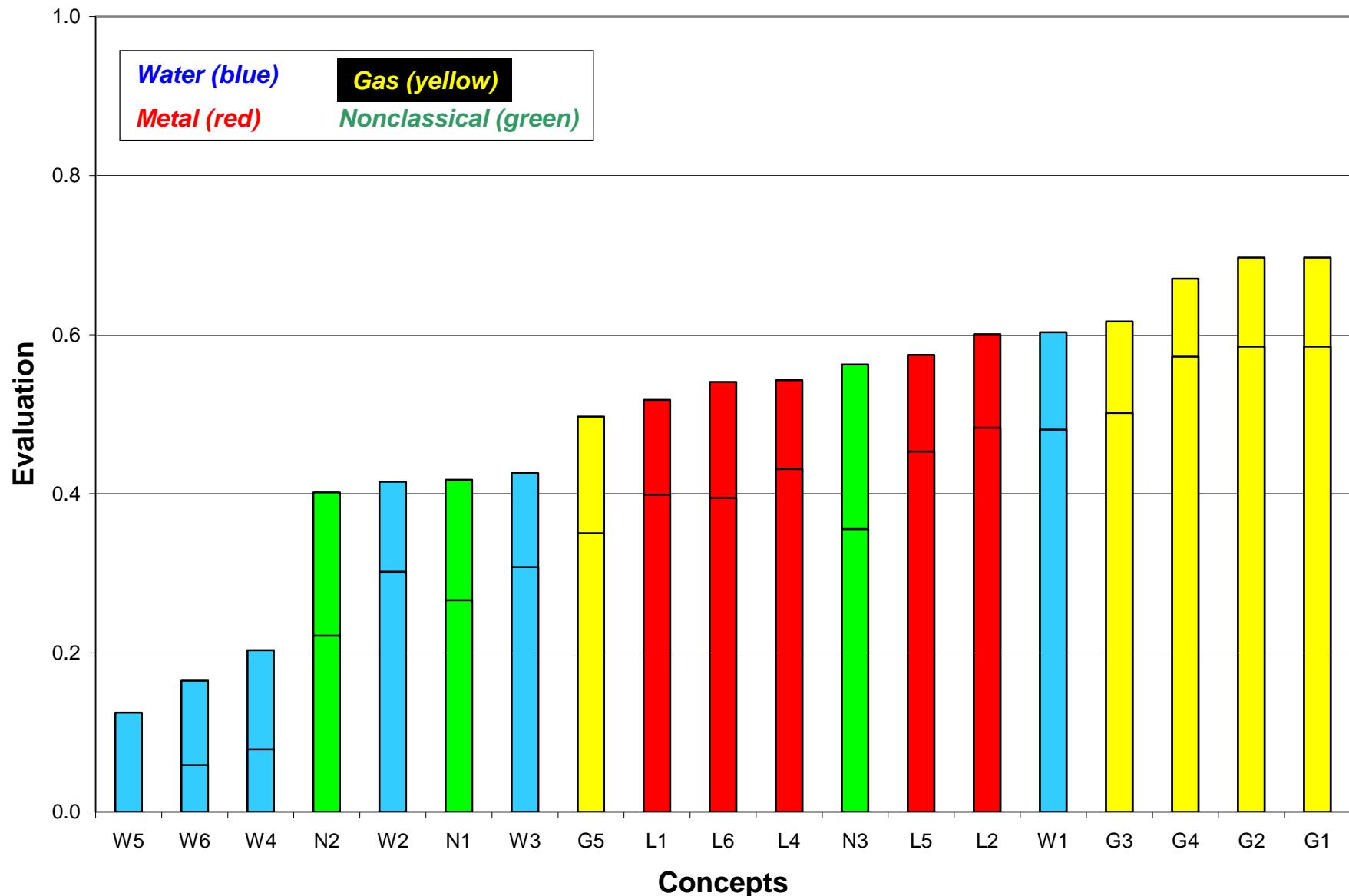


System	ID	SU-1	SR	EC*	System	ID	SU-2	SR	EC*	System	ID	SU-3	SR	EC*
Na Metal Pyro	L2	0.95	0.47	0.48	Na MOX Aq	L1	0.82	0.44	-0.31	VCR	N2	0.58	0.33	-0.10
Na MOX Aq	L1	0.95	0.44	-0.31	Na Metal Pyro	L2	0.82	0.47	0.48	Pb/Bi Battery	L6	0.52	0.36	0.42
Pb large	L5	0.95	0.42	-0.15	Pb large	L5	0.80	0.42	-0.15	MSR	N1	0.31	0.25	0.10
Pb/Bi small	L4	0.95	0.39	0.27	Pb/Bi small	L4	0.80	0.39	0.27	PBR	G1	0.29	0.60	0.63
GFR	G5	0.95	0.37	0.38	Pb/Bi Battery	L6	0.80	0.36	0.42	PMR	G2	0.29	0.59	0.56
Pb/Bi Battery	L6	0.95	0.36	0.42	GFR	G5	0.79	0.37	0.38	AHTR	N3	0.29	0.45	0.05
MSR	N1	0.95	0.25	0.10	SCWR-F	W5	0.73	0.19	0.24	HTGR Closed	G4	0.28	0.54	0.56
SCWR-F	W5	0.95	0.19	0.24	HTGR Closed	G4	0.71	0.54	0.56	Na Metal Pyro	L2	0.27	0.47	0.48
HC-BWR	W6	0.95	0.13	-0.48	VCR	N2	0.62	0.33	-0.10	Pb large	L5	0.27	0.42	-0.15
VCR	N2	0.90	0.33	-0.10	MSR	N1	0.62	0.25	0.10	Pb/Bi small	L4	0.27	0.39	0.27
HTGR Closed	G4	0.68	0.54	0.56	HC-BWR	W6	0.40	0.13	-0.48	GFR	G5	0.26	0.37	0.38
PBR	G1	0.08	0.60	0.63	SCWR-T	W4	0.29	0.22	0.31	Na MOX Aq	L1	0.23	0.44	-0.31
PMR	G2	0.08	0.59	0.56	IPSR	W1	0.13	0.43	0.58	IPSR	W1	0.23	0.43	0.58
VHTR	G3	0.08	0.56	0.56	PBR	G1	0.13	0.60	0.63	SCWR-F	W5	0.21	0.19	0.24
AHTR	N3	0.08	0.45	0.05	CANDU NG	W3	0.10	0.35	0.76	HC-BWR	W6	0.21	0.13	-0.48
SBWR	W2	0.05	0.36	-0.17	SBWR	W2	0.04	0.36	-0.17	VHTR	G3	0.17	0.56	0.56
CANDU NG	W3	0.05	0.35	0.76	AHTR	N3	0.04	0.45	0.05	SBWR	W2	0.12	0.36	-0.17
SCWR-T	W4	0.05	0.22	0.31	PMR	G2	0.02	0.59	0.56	CANDU NG	W3	0.12	0.35	0.76
IPSR	W1	0.00	0.43	0.58	VHTR	G3	-0.01	0.56	0.56	SCWR-T	W4	0.09	0.22	0.31

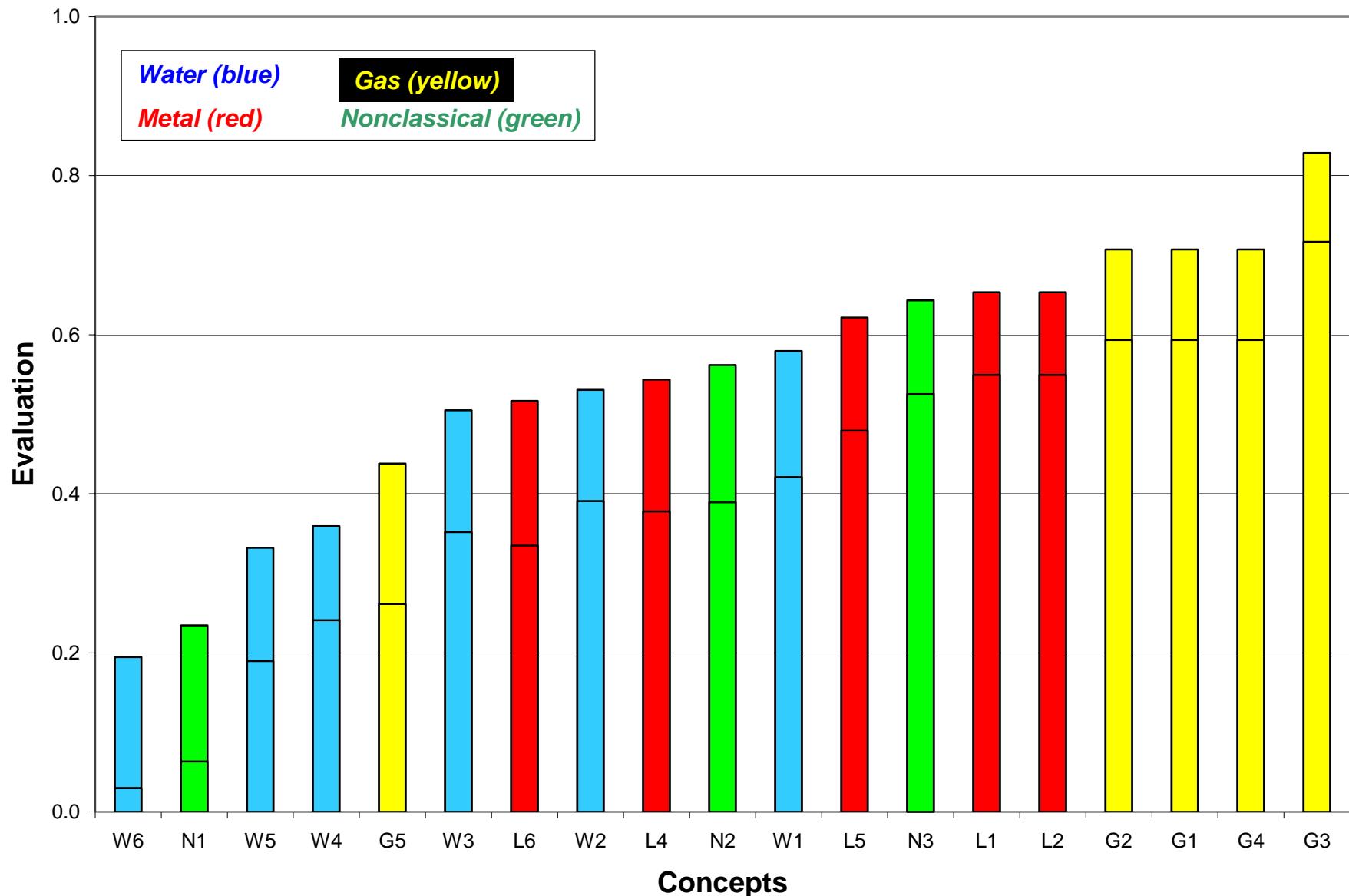
Safety & Reliability Goal 1 Evaluations



Safety & Reliability Goal 2 Evaluations



Safety & Reliability Goal 3 Evaluations



Safety & Reliability Goal Evaluations and Ranking

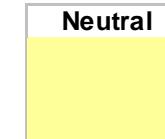
Top Ranking



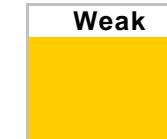
Good



Neutral



Weak

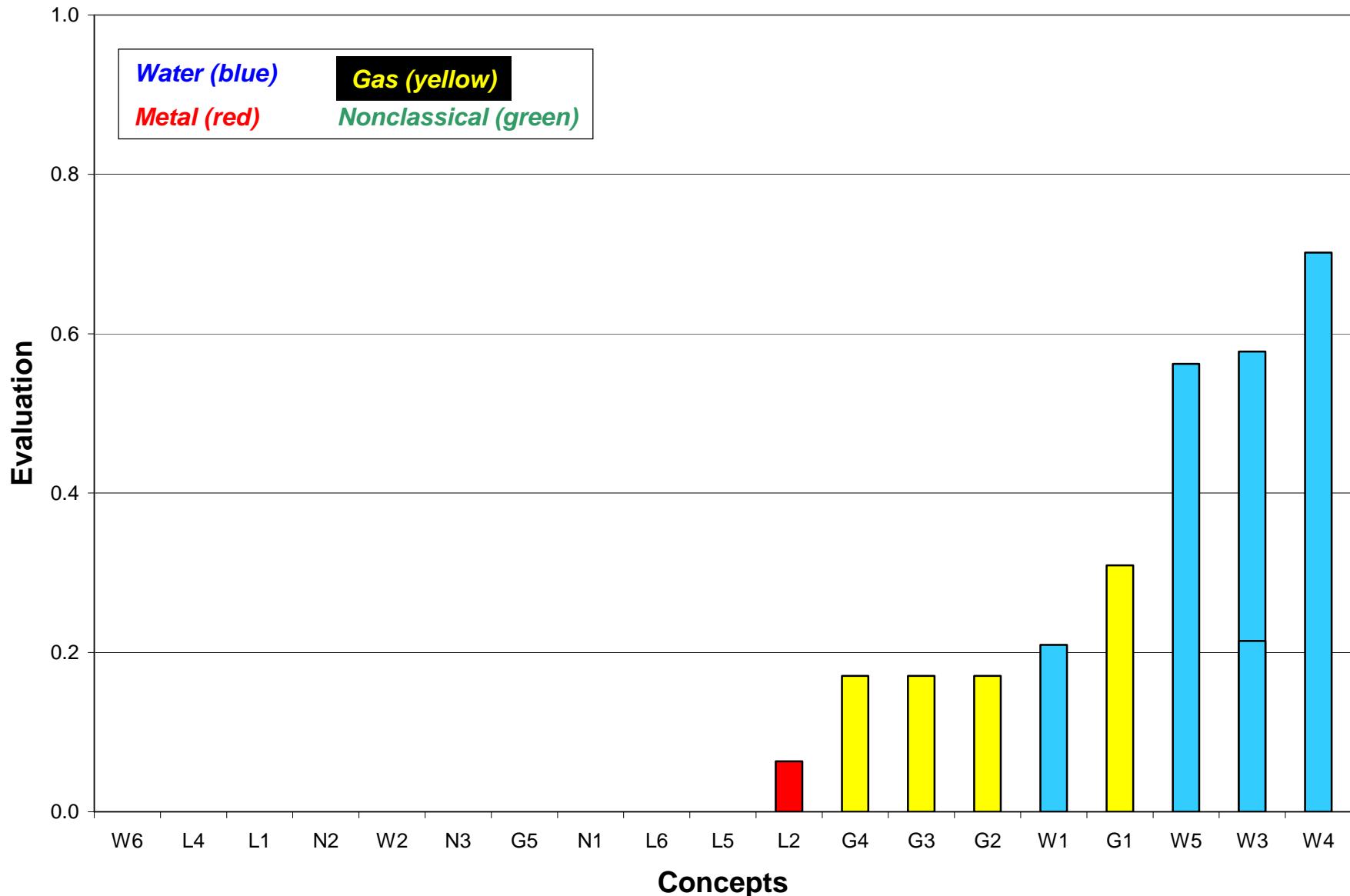


System	ID	SU	SR-1	EC*
PBR	G1	0.14	0.47	0.63
PMR	G2	0.12	0.45	0.56
HTGR Closed	G4	0.53	0.33	0.56
VHTR	G3	0.06	0.31	0.56
AHTR	N3	0.12	0.27	0.05
GFR	G5	0.65	0.25	0.38
MSR	N1	0.61	0.22	0.10
Na Metal Pyro	L2	0.67	0.20	0.48
Na MOX Aq	L1	0.66	0.20	-0.31
IPSR	W1	0.11	0.20	0.58
SBWR	W2	0.06	0.19	-0.17
CANDU NG	W3	0.08	0.18	0.76
SCWR-F	W5	0.62	0.18	0.24
SCWR-T	W4	0.13	0.16	0.31
VCR	N2	0.65	0.15	-0.10
Pb/Bi Battery	L6	0.74	0.12	0.42
Pb large	L5	0.66	0.12	-0.15
Pb/Bi small	L4	0.66	0.12	0.27
HC-BWR	W6	0.51	0.09	-0.48

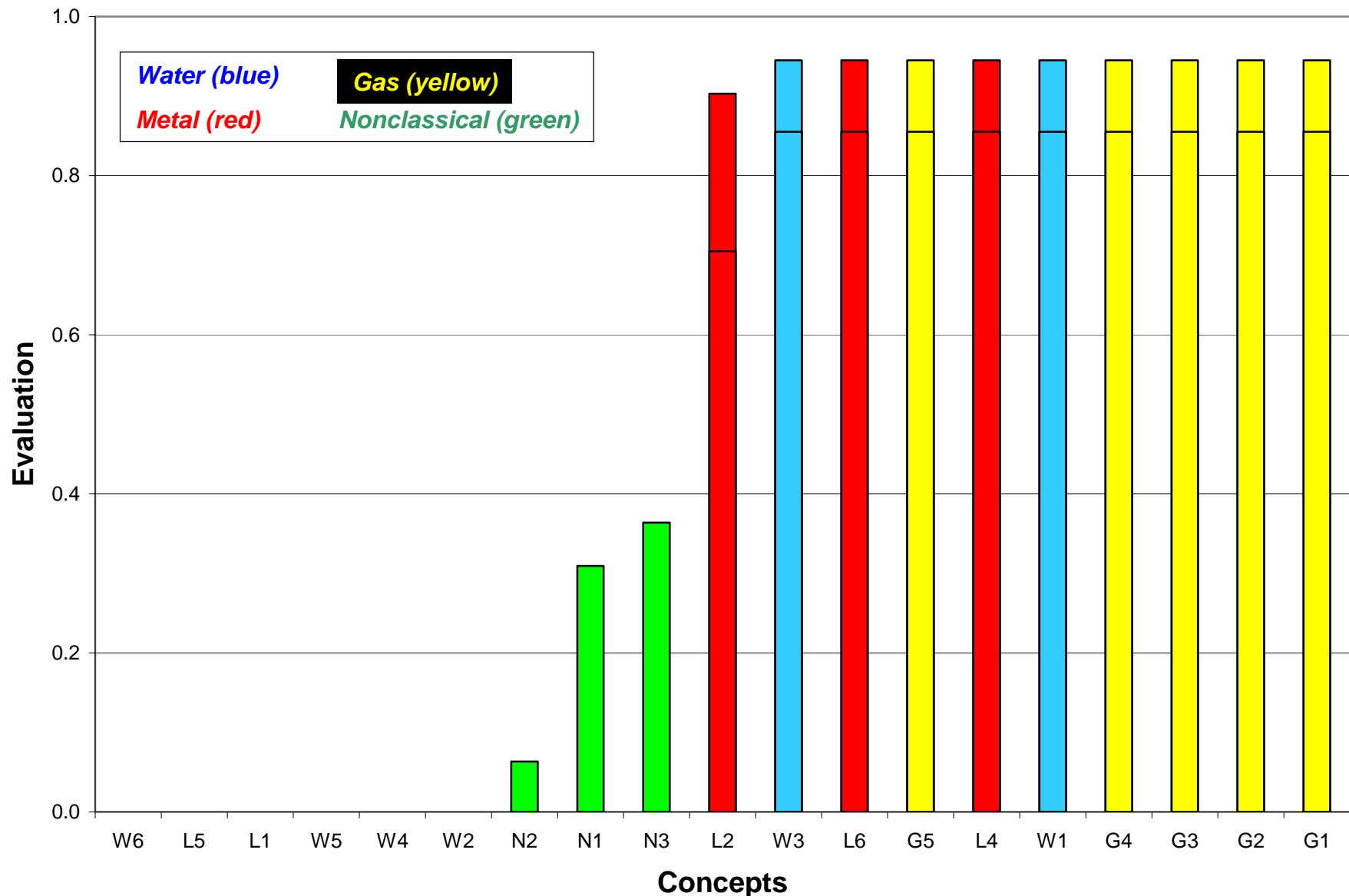
System	ID	SU	SR-2	EC*
PBR	G1	0.14	0.70	0.63
PMR	G2	0.12	0.70	0.56
HTGR Closed	G4	0.53	0.67	0.56
VHTR	G3	0.06	0.62	0.56
IPSR	W1	0.11	0.60	0.58
Na Metal Pyro	L2	0.67	0.60	0.48
Pb large	L5	0.66	0.57	-0.15
AHTR	N3	0.12	0.56	0.05
Pb/Bi small	L4	0.66	0.54	0.27
Pb/Bi Battery	L6	0.74	0.54	0.42
Na MOX Aq	L1	0.66	0.52	-0.31
GFR	G5	0.65	0.50	0.38
CANDU NG	W3	0.08	0.43	0.76
MSR	N1	0.61	0.42	0.10
SBWR	W2	0.06	0.42	-0.17
VCR	N2	0.65	0.40	-0.10
SCWR-T	W4	0.13	0.20	0.31
HC-BWR	W6	0.51	0.16	-0.48
SCWR-F	W5	0.62	0.12	0.24

System	ID	SU	SR-3	EC*
VHTR	G3	0.06	0.83	0.56
HTGR Closed	G4	0.53	0.71	0.56
PBR	G1	0.14	0.71	0.63
PMR	G2	0.12	0.71	0.56
Na Metal Pyro	L2	0.67	0.65	0.48
Na MOX Aq	L1	0.66	0.65	-0.31
AHTR	N3	0.12	0.64	0.05
Pb large	L5	0.66	0.62	-0.15
IPSR	W1	0.11	0.58	0.58
VCR	N2	0.65	0.56	-0.10
Pb/Bi small	L4	0.66	0.54	0.27
SBWR	W2	0.06	0.53	-0.17
Pb/Bi Battery	L6	0.74	0.52	0.42
CANDU NG	W3	0.08	0.51	0.76
GFR	G5	0.65	0.44	0.38
SCWR-T	W4	0.13	0.36	0.31
SCWR-F	W5	0.62	0.33	0.24
MSR	N1	0.61	0.23	0.10
HC-BWR	W6	0.51	0.19	-0.48

Economics Goal 1 Evaluations



Economics Goal 2 Evaluations



Economics Goal Evaluations and Ranking



System	ID	SU	SR	EC*	System	ID	SU	SR	EC-1	System	ID	SU	SR	EC-2
CANDU NG	W3	0.08	0.35	0.76	SCWR-T	W4	0.13	0.22	0.70	PBR	G1	0.14	0.60	0.95
PBR	G1	0.14	0.60	0.63	CANDU NG	W3	0.08	0.35	0.58	PMR	G2	0.12	0.59	0.95
IPSR	W1	0.11	0.43	0.58	SCWR-F	W5	0.62	0.19	0.56	VHTR	G3	0.06	0.56	0.95
PMR	G2	0.12	0.59	0.56	PBR	G1	0.14	0.60	0.31	HTGR Closed	G4	0.53	0.54	0.95
VHTR	G3	0.06	0.56	0.56	IPSR	W1	0.11	0.43	0.21	IPSR	W1	0.11	0.43	0.95
HTGR Closed	G4	0.53	0.54	0.56	PMR	G2	0.12	0.59	0.17	Pb/Bi small	L4	0.66	0.39	0.95
Na Metal Pyro	L2	0.67	0.47	0.48	VHTR	G3	0.06	0.56	0.17	GFR	G5	0.65	0.37	0.95
Pb/Bi Battery	L6	0.74	0.36	0.42	HTGR Closed	G4	0.53	0.54	0.17	Pb/Bi Battery	L6	0.74	0.36	0.95
GFR	G5	0.65	0.37	0.38	Na Metal Pyro	L2	0.67	0.47	0.06	CANDU NG	W3	0.08	0.35	0.95
SCWR-T	W4	0.13	0.22	0.31	Pb large	L5	0.66	0.42	-0.08	Na Metal Pyro	L2	0.67	0.47	0.90
Pb/Bi small	L4	0.66	0.39	0.27	Pb/Bi Battery	L6	0.74	0.36	-0.11	AHTR	N3	0.12	0.45	0.36
SCWR-F	W5	0.62	0.19	0.24	MSR	N1	0.61	0.25	-0.11	MSR	N1	0.61	0.25	0.31
MSR	N1	0.61	0.25	0.10	GFR	G5	0.65	0.37	-0.18	VCR	N2	0.65	0.33	0.06
AHTR	N3	0.12	0.45	0.05	AHTR	N3	0.12	0.45	-0.26	SBWR	W2	0.06	0.36	-0.08
VCR	N2	0.65	0.33	-0.10	SBWR	W2	0.06	0.36	-0.26	SCWR-T	W4	0.13	0.22	-0.08
Pb large	L5	0.66	0.42	-0.15	VCR	N2	0.65	0.33	-0.26	SCWR-F	W5	0.62	0.19	-0.08
SBWR	W2	0.06	0.36	-0.17	Na MOX Aq	L1	0.66	0.44	-0.41	Na MOX Aq	L1	0.66	0.44	-0.21
Na MOX Aq	L1	0.66	0.44	-0.31	Pb/Bi small	L4	0.66	0.39	-0.41	Pb large	L5	0.66	0.42	-0.21
HC-BWR	W6	0.51	0.13	-0.48	HC-BWR	W6	0.51	0.13	-0.41	HC-BWR	W6	0.51	0.13	-0.56

Requested Sensitivities

Economics Goal Evaluations and Ranking: Sensitivity to Goal Weights



System	ID	SU	SR	50/50 EC*	System	ID	SU	SR	67/33 EC*
CANDU NG	W3	0.08	0.35	0.76	CANDU NG	W3	0.08	0.35	0.70
PBR	G1	0.14	0.60	0.63	PBR	G1	0.14	0.60	0.52
IPSR	W1	0.11	0.43	0.58	IPSR	W1	0.11	0.43	0.45
PMR	G2	0.12	0.59	0.56	SCWR-T	W4	0.13	0.22	0.44
VHTR	G3	0.06	0.56	0.56	PMR	G2	0.12	0.59	0.43
HTGR Closed	G4	0.53	0.54	0.56	VHTR	G3	0.06	0.56	0.43
Na Metal Pyro	L2	0.67	0.47	0.48	HTGR Closed	G4	0.53	0.54	0.43
Pb/Bi Battery	L6	0.74	0.36	0.42	SCWR-F	W5	0.62	0.19	0.35
GFR	G5	0.65	0.37	0.38	Na Metal Pyro	L2	0.67	0.47	0.34
SCWR-T	W4	0.13	0.22	0.31	Pb/Bi Battery	L6	0.74	0.36	0.24
Pb/Bi small	L4	0.66	0.39	0.27	GFR	G5	0.65	0.37	0.20
SCWR-F	W5	0.62	0.19	0.24	Pb/Bi small	L4	0.66	0.39	0.04
MSR	N1	0.61	0.25	0.10	MSR	N1	0.61	0.25	0.03
AHTR	N3	0.12	0.45	0.05	AHTR	N3	0.12	0.45	-0.05
VCR	N2	0.65	0.33	-0.10	Pb large	L5	0.66	0.42	-0.12
Pb large	L5	0.66	0.42	-0.15	VCR	N2	0.65	0.33	-0.15
SBWR	W2	0.06	0.36	-0.17	SBWR	W2	0.06	0.36	-0.20
Na MOX Aq	L1	0.66	0.44	-0.31	Na MOX Aq	L1	0.66	0.44	-0.34
HC-BWR	W6	0.51	0.13	-0.48	HC-BWR	W6	0.51	0.13	-0.46

Sustainability Goal Evaluations and Ranking: Sensitivity to Nonproliferation



System	ID	SU	SR	EC*	System	ID	SU-1&2	SR	EC*	System	ID	SU-3	SR	EC*
Pb/Bi Battery	L6	0.74	0.36	0.42	Na MOX Aq	L1	0.89	0.44	-0.31	Pb/Bi Battery	L6	0.52	0.36	0.42
Na Metal Pyro	L2	0.67	0.47	0.48	Na Metal Pyro	L2	0.88	0.47	0.48	VCR	N2	0.51	0.33	-0.10
Pb large	L5	0.66	0.42	-0.15	Pb large	L5	0.87	0.42	-0.15	MSR	N1	0.31	0.25	0.10
Pb/Bi small	L4	0.66	0.39	0.27	Pb/Bi small	L4	0.87	0.39	0.27	PBR	G1	0.29	0.60	0.63
Na MOX Aq	L1	0.66	0.44	-0.31	Pb/Bi Battery	L6	0.87	0.36	0.42	PMR	G2	0.29	0.59	0.56
VCR	N2	0.65	0.33	-0.10	GFR	G5	0.85	0.37	0.38	AHTR	N3	0.29	0.45	0.05
GFR	G5	0.65	0.37	0.38	SCWR-F	W5	0.83	0.19	0.24	HTGR Closed	G4	0.28	0.54	0.56
SCWR-F	W5	0.62	0.19	0.24	MSR	N1	0.77	0.25	0.10	Na Metal Pyro	L2	0.27	0.47	0.48
MSR	N1	0.61	0.25	0.10	VCR	N2	0.72	0.33	-0.10	Pb/Bi small	L4	0.27	0.39	0.27
HTGR Closed	G4	0.53	0.54	0.56	HTGR Closed	G4	0.68	0.54	0.56	Pb large	L5	0.27	0.42	-0.15
HC-BWR	W6	0.51	0.13	-0.48	HC-BWR	W6	0.66	0.13	-0.48	GFR	G5	0.26	0.37	0.38
PBR	G1	0.14	0.60	0.63	SCWR-T	W4	0.16	0.22	0.31	Na MOX Aq	L1	0.23	0.44	-0.31
SCWR-T	W4	0.13	0.22	0.31	PBR	G1	0.09	0.60	0.63	IPSR	W1	0.23	0.43	0.58
AHTR	N3	0.12	0.45	0.05	CANDU NG	W3	0.06	0.35	0.76	SCWR-F	W5	0.21	0.19	0.24
PMR	G2	0.12	0.59	0.56	IPSR	W1	0.04	0.43	0.58	HC-BWR	W6	0.21	0.13	-0.48
IPSR	W1	0.11	0.43	0.58	SBWR	W2	0.04	0.36	-0.17	VHTR	G3	0.17	0.56	0.56
CANDU NG	W3	0.08	0.35	0.76	AHTR	N3	0.04	0.45	0.05	SBWR	W2	0.12	0.36	-0.17
VHTR	G3	0.06	0.56	0.56	PMR	G2	0.03	0.59	0.56	CANDU NG	W3	0.12	0.35	0.76
SBWR	W2	0.06	0.36	-0.17	VHTR	G3	0.02	0.56	0.56	SCWR-T	W4	0.09	0.22	0.31

Sustainability Goal Evaluations and Ranking: Sensitivity to Fuel Utilization



System	ID	SU	SR	EC*	System	ID	SU-2&3	SR	EC*	System	ID	SU-1	SR	EC*
Pb/Bi Battery	L6	0.74	0.36	0.42	Pb/Bi Battery	L6	0.64	0.36	0.42	Na Metal Pyro	L2	0.95	0.47	0.48
Na Metal Pyro	L2	0.67	0.47	0.48	VCR	N2	0.58	0.33	-0.10	Na MOX Aq	L1	0.95	0.44	-0.31
Pb large	L5	0.66	0.42	-0.15	Na Metal Pyro	L2	0.53	0.47	0.48	Pb large	L5	0.95	0.42	-0.15
Pb/Bi small	L4	0.66	0.39	0.27	Pb/Bi small	L4	0.53	0.42	-0.15	Pb/Bi small	L4	0.95	0.39	0.27
Na MOX Aq	L1	0.66	0.44	-0.31	Na MOX Aq	L1	0.52	0.44	-0.31	GFR	G5	0.95	0.37	0.38
VCR	N2	0.65	0.33	-0.10	GFR	G5	0.52	0.37	0.38	Pb/Bi Battery	L6	0.95	0.36	0.42
GFR	G5	0.65	0.37	0.38	HTGR Closed	G4	0.49	0.54	0.56	MSR	N1	0.95	0.25	0.10
SCWR-F	W5	0.62	0.19	0.24	SCWR-F	W5	0.45	0.19	0.24	SCWR-F	W5	0.95	0.19	0.24
MSR	N1	0.61	0.25	0.10	MSR	N1	0.44	0.25	0.10	HC-BWR	W6	0.95	0.13	-0.48
HTGR Closed	G4	0.53	0.54	0.56	HC-BWR	W6	0.30	0.13	-0.48	VCR	N2	0.90	0.33	-0.10
HC-BWR	W6	0.51	0.13	-0.48	PBR	G1	0.21	0.60	0.63	HTGR Closed	G4	0.68	0.54	0.56
PBR	G1	0.14	0.60	0.63	SCWR-T	W4	0.18	0.22	0.31	PBR	G1	0.08	0.60	0.63
SCWR-T	W4	0.13	0.22	0.31	IPSR	W1	0.18	0.43	0.58	PMR	G2	0.08	0.59	0.56
AHTR	N3	0.12	0.45	0.05	AHTR	N3	0.15	0.45	0.05	VHTR	G3	0.08	0.56	0.56
PMR	G2	0.12	0.59	0.56	PMR	G2	0.14	0.59	0.56	AHTR	N3	0.08	0.45	0.05
IPSR	W1	0.11	0.43	0.58	CANDU NG	W3	0.10	0.35	0.76	SBWR	W2	0.05	0.36	-0.17
CANDU NG	W3	0.08	0.35	0.76	SBWR	W2	0.08	0.36	-0.17	CANDU NG	W3	0.05	0.35	0.76
VHTR	G3	0.06	0.56	0.56	VHTR	G3	0.08	0.56	0.56	SCWR-T	W4	0.05	0.22	0.31
SBWR	W2	0.06	0.36	-0.17	IPSR	W1	0.00	0.43	0.58	IPSR	W1	0.00	0.43	0.58

Results of Sensitivity Studies

- ‘Market weighting’ of EC–1 and –2:
 - Large SCWRs *rise from Good to Best*
 - Small Na metal Pyro and Pb/Bi Battery *fall from Best to Good*
- Removal of Nonproliferation from SU
 - Na MOX Aq (L1) and Pb/Bi Battery (L6) swap, *but stay in Best*
 - MSR (N1) *rises from Good to Best*
 - VCR (N2) *falls from Best to Good*
- Removal of Fuel Utilization from SU
 - Neutral group *unchanged*
 - HTGR Closed (G4) *rises from Good to Best*
 - SCWR-F (W5) *falls from Best to Good*

Walkdown of Concepts

Walkdown: General Ordering

Best in	System	ID	Composite	
			Strength	Score
			Rank	
3	Na Metal Pyro	L2	SU, SR, EC	2
2	HTGR closed	G4	SR, EC, Good SU	1
2	Pb/Bi battery	L6	SU, EC, Good SR	3
2	PBR	G1	SR, EC, Neutral SU	5
2	PMR	G2	SR, EC, Neutral SU	7
2	VHTR	G3	SR, EC, Neutral SU	9
2	IPSR	W1	EC, SR, Neutral SU	10
2	Na MOX Aq	L1	SU, SR, Weak EC	15
1	GFR	G5	SU, Good EC, Good SR	4
1	Pb/Bi small	L4	SU, Good SR, Good EC	6
1	CANDU NG	W3	EC, Good SR, Neutral SU	8
1	SCWR-F	W5	SU, Good EC, Neutral SR	11
1	AHTR	N3	SR, Good EC, Neutral SU	17
1	Pb large	L5	SU, Good SR, Weak EC	13
1	VCR	N2	SU, Neutral SR, Neutral EC	14
0	SCWR-T	W4	Good EC, Neutral SU, Neutral SR	16
0	MSR	N1	Good SU, Neutral EC, Neutral SR	12
0	SBWR	W2	Good SR, Neutral SU, Weak EC	18
0	HC-BWR	W6	Good SU, Neutral SR, Weak EC	19

Walkdown: Additional Considerations

Best in	System	ID	Strength	Composite		Development		
				Score	Applications		Cost (\$B)	
					Primary	Secondary		
3	Na Metal Pyro	L2	SU, SR, EC	2	AM	E2	mid	1.2
2	HTGR closed	G4	SR, EC, Good SU	1	AM	E2	mid	0.8
2	Pb/Bi battery	L6	SU, EC, Good SR	3	E2	H, AM	long	1.2
2	PBR	G1	SR, EC, Neutral SU	5	E2		near	0.5
2	PMR	G2	SR, EC, Neutral SU	7	E2		near	0.8
2	VHTR	G3	SR, EC, Neutral SU	9	H		mid	1.2
2	IPSR	W1	EC, SR, Neutral SU	10	E2		near	0.5
2	Na MOX Aq	L1	SU, SR, Weak EC	15	AM	E1	mid	0.6
1	GFR	G5	SU, Good EC, Good SR	4	AM	E2	long	1.5
1	Pb/Bi small	L4	SU, Good SR, Good EC	6	AM	E2	long	1.5
1	CANDU NG	W3	EC, Good SR, Neutral SU	8	E1		near	0.3
1	SCWR-F	W5	SU, Good EC, Neutral SR	11	E1	AM	long	1.2
1	AHTR	N3	SR, Good EC, Neutral SU	17	H		long	1.0
1	Pb large	L5	SU, Good SR, Weak EC	13	E1	AM	long	1.5
1	VCR	N2	SU, Neutral SR, Neutral EC	14	E1	H	long	2.3
0	SCWR-T	W4	Good EC, Neutral SU, Neutral SR	16	E1	E1	mid	0.9
0	MSR	N1	Good SU, Neutral EC, Neutral SR	12	E1	AM	long	1.5
0	SBWR	W2	Good SR, Neutral SU, Weak EC	18	E1		near	0.2
0	HC-BWR	W6	Good SU, Neutral SR, Weak EC	19	AM	E1	mid	0.8
Keys:			E1: Large grid electricity		near: before 2015			
			E2: Small grid electricity		mid: 2015-2020			
			H: Hydrogen/High Temperature		long: 2020-2030			
			AM: Actinide management					

Walkdown: Selections

Select	Best	Composite					Development			Decision: Justification	
		Tier	in	System	ID	Strength	Score	Rank	Primary	Secondary	
1st	3	Na Metal Pyro	L2	SU, SR, EC			2	AM	E2	mid	1.2 Select: strongest performance overall
1st	2	HTGR closed	G4	SR, EC, Good SU			1	AM	E2	mid	0.8 Select: strong, but consider Th fuel cycle fit
1st	2	Pb/Bi battery	L6	SU, EC, Good SR			3	E2	H, AM	long	1.2 Select: strong, but consider deployment fit
2	PBR		G1	SR, EC, Neutral SU			5	E2		near	0.5 Reject: no SU benefit
2	PMR		G2	SR, EC, Neutral SU			7	E2		near	0.8 Reject: no SU benefit
2nd	2	VHTR	G3	SR, EC, Neutral SU			9	H		mid	1.2 Select: no SU benefit, but desired H application
2	IPSR		W1	EC, SR, Neutral SU			10	E2		near	0.5 Reject: no SU benefit
2	Na MOX Aq		L1	SU, SR, Weak EC			15	AM	E1	mid	0.6 Reject: weak EC-1 and EC-2
1st	1	GFR	G5	SU, Good EC, Good SR			4	AM	E2	long	1.5 Select: strong, alternative technology for AM
2nd	1	Pb/Bi small	L4	SU, Good SR, Good EC			6	AM	E2	long	1.5 Select: strong, alternative technology for AM
1	CANDU NG		W3	EC, Good SR, Neutral SU			8	E1		near	0.3 Reject: no SU benefit
2nd	1	SCWR-F	W5	SU, Good EC, Neutral SR			11	E1	AM	long	1.2 Select: top rank EC-1 for E1, but consider fuel cycle fit
2nd	1	AHTR	N3	SR, Good EC, Neutral SU			17	H		long	1.0 Select: no SU benefit, but desired H application
1	Pb large		L5	SU, Good SR, Weak EC			13	E1	AM	long	1.5 Reject: stronger candidates available
1	VCR		N2	SU, Neutral SR, Neutral EC			14	E1	H	long	2.3 Reject: stronger candidates available
0	SCWR-T		W4	Good EC, Neutral SU, Neutral SR			16	E1	E1	mid	0.9 (identify EC strength in W5 pathway)
0	MSR		N1	Good SU, Neutral EC, Neutral SR			12	E1	AM	long	1.5 Reject: stronger candidates available
0	SBWR		W2	Good SR, Neutral SU, Weak EC			18	E1		near	0.2 Reject: stronger candidates available
0	HC-BWR		W6	Good SU, Neutral SR, Weak EC			19	AM	E1	mid	0.8 Reject: stronger candidates available
Keys:		E1: Large grid electricity			near: before 2015						
		E2: Small grid electricity			mid: 2015-2020						
		H: Hydrogen/High Temperature			long: 2020-2030						
		AM: Actinide management									

General Results of Walkdown

- ***First Tier has strong advancement in mid- and long-term***
 - ***All four are strong in SU and good in the other areas***
- ***Second Tier adds to overall balance and options***
 - ***SCWR-F/T added as a large plant option***
 - ***Pb/Bi Small added as a deployment alternative to L6***
 - ***Two best performing Hydrogen producers added***

Expected Actions to Finalize the Selections

- ***GRNS is asked to rank the entire field, perhaps in several tiers***
- ***GRNS may raise scoring issues during Wednesday***

After the meeting:

- ***Pending reviews and requests will be resolved***
- ***FCCG should examine:***
 - ***Overall fit of the selections***
 - ***Pros/cons of the G4 Th fuel cycle***
 - ***Pros/cons of the W5 fuel cycle***
- ***Quarterly will raise additional issues, which the RIT may want to consider***
- ***GIF Experts will raise additional issues, which the RIT may want to consider***